



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/551,031

09/27/2005

Yoshitake Hara

IPE-062

4673

20374 7590 07/06/2009  
KUBOVCIK & KUBOVCIK  
SUITE 1105  
1215 SOUTH CLARK STREET  
ARLINGTON, VA 22202

EXAMINER

MCCULLEY, MEGAN CASSANDRA

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

07/06/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/551,031	<b>Applicant(s)</b> HARA ET AL.	
	<b>Examiner</b> Megan McCulley	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5,8-13 and 15-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,8-13 and 15-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-5, 8-10, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko (JP 2002-226675) in view of Matsumura et al. (JP 2001-294445). The English language translations of the Japanese documents are used for the citations below.

Regarding claims 1-5: Kaneko teaches a paste composition (title) containing an inorganic filler/silica, an epoxy resin (pg. 2 claim 1), a curing accelerator/imidazole (pg. 10, para. 23), a solvent/butyl carbitol acetate (pg. 6 para. 11), which has a boiling point of 246.7 °C and an ester bond, as well as gamma-butyl lactone (pg. 8 para. 15) which has a boiling point of 205 °C and an ester-lactone structure.

Kaneko does not teach the specific filler of claim 2. However, Matsumura et al. teaches barium titanate (pg. 6 para. 9). Kaneko and Matsumura et al. are analogous art since they are both concerned with the same field of endeavor, namely insulating paste compositions used for conductor parts. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the specific filler of Matsumura et al. with the composition of Kaneko and would have been motivated to do so for such desirable properties as high dielectric constants for miniaturized electronic (Matsumura et al. pg. 3 para. 2 and pg. 6 para. 9).

Art Unit: 1796

Kaneko also does not disclose a particle size of 5  $\mu\text{m}$  or smaller or the greater mean particle size is 3 times more than the minimum particle size. However, Matsumura et al. teaches a mean particle diameter of 0.5-5  $\mu\text{m}$  and another inorganic filler with a mean particle diameter of 0.1-1  $\mu\text{m}$  (pg. 3 claims 8-9). 5  $\mu\text{m}$  is 3 times or more than 1  $\mu\text{m}$ . At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the disclosed particle sizes of Matsumura et al. with the composition of Kaneko and would have been motivated to do so for such desirable properties as finished smoothness, and less coagulation, as evidenced by Matsumura et al. (pg. 7 para. 11 and pg. 8 para. 14).

Kaneko also does not disclose the amount of solvent. However, Matsumura et al. teaches 21% solvent (example 1). At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the amount of solvent of Matsumura et al. with the composition of Kaneko and would have been motivated to do so to obtain the desired viscosity.

Regarding claim 8: Kaneko teaches a phosphoric ester (pg. 2 claim 1).

Regarding claims 9, 10 and 17: Kaneko teaches solidifying/curing the composition (pg. 9 para. 19). Not disclosed is the solvent being removed of the content of the inorganic filler after the solvent removal or a film thickness of the composition in a capacitor. However, Matsumura et al. teaches the composition obtained by drying/removing the solvent (page 11 para. 24) and 88.7% of solids in the composition being the inorganic filler, based on calculation of example 1 (page 17 table 1) and a film thickness of 10 microns (page 14, #2 in para. 31). The composition is in a capacitor as

Art Unit: 1796

an insulating layer (para. 2). While Matsumura et al. does not directly teach that the porosity is less than 30% by volume, since all of the components are present in the composition and it is dried in the same manner as the instant invention, it is implicit that the composition would have this property. If it is applicants' position that this would not be the case: (1) evidence would need to be presented to support applicants' position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain a composition with this property. At the time of the invention a person having ordinary skill in the art would have found it obvious to remove the solvent as in Matsumura et al. in the composition of Kaneko and would have been motivated to do so since the organic solvent residue will worsen the sintering property of the composition, as evidenced by Matsumura et al. (pg. 15 para. 33).

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko (JP 2002-226675) in view of Matsumura et al. (JP 2001-294445) as applied to claim 1 above and in further view of Ingman et al. (US 2003/0026584). The English language translations of the Japanese documents are used for the citations below.

Regarding claim 18: Kaneko teaches the basic claimed composition as set forth above. Kaneko does not teach an optical wire. However Ingman et al. teaches an optical wire/optical fiber made with a resin and containing inorganic filler particles (para. 70). Kaneko and Ingman et al. are analogous art because they are both concerned with the same field of endeavor, namely resin composition comprising inorganic filler

Art Unit: 1796

particles. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the optical wire/fiber of Ingman et al. with the composition of Kaneko and would have been motivated to do so because, as the composition is insulating, which is needed in optical fibers.

Claims 11-13, 15, 16, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko (JP 2002-226675) in view of Matsumura et al. (JP 2001-294445). The English language translations of the Japanese documents are used for the citations below.

Regarding claims 11, 12, 15: Kaneko teaches a paste composition (title) containing an inorganic filler/silica, an epoxy resin (pg. 2 claim 1), a curing accelerator/imidazole (pg. 10, para. 23).

Kaneko does not teach the specific filler. However, Matsumura et al. teaches barium titanate (pg. 6 para. 9). At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the specific filler of Matsumura et al. with the composition of Kaneko and would have been motivated to do so for such desirable properties as high dielectric constants for miniaturized electronic (Matsumura et al. pg. 3 para. 2 and pg. 6 para. 9).

Kaneko also does not disclose a particle size of 5  $\mu\text{m}$  or smaller or the greater mean particle size is 3 times more than the minimum particle size. However, Matsumura et al. teaches a mean particle diameter of 0.5-5  $\mu\text{m}$  and another inorganic filler with a mean particle diameter of 0.1-1  $\mu\text{m}$  (pg. 3 claims 8-9). 5  $\mu\text{m}$  is 3 times or

Art Unit: 1796

more than 1  $\mu\text{m}$ . At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the disclosed particle sizes of Matsumura et al. with the composition of Kaneko and would have been motivated to do so for such desirable properties as finished smoothness, and less coagulation, as evidenced by Matsumura et al. (pg. 7 para. 11 and pg. 8 para. 14).

Regarding claim 13: Kaneko teaches 50% filler based on the total of the filler and the resin (example 1).

Regarding claim 16: Kaneko teaches a phosphoric ester (pg. 2 claim 1).

Regarding claim 19: Kaneko does not teach a capacitor. However, Matsumura et al. teaches the composition is in a capacitor as an insulating layer (para. 2). At the time of the invention a person having ordinary skill in the art would have found it obvious to substitute a the composition of Kaneko in the capacitor of Matsumura et al. and would have been motivated to do so since the composition of Kaneko has high adhesive reliability (pg. 4 para. 5).

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko (JP 2002-226675) in view of Matsumura et al. (JP 2001-294445) as applied to claim 11 above and in further view of Ingman et al. (US 2003/0026584). The English language translations of the Japanese documents are used for the citations below.

Regarding claim 20: Kaneko teaches the basic claimed composition as set forth above. Kaneko does not teach an optical wire. However Ingman et al. teaches an optical wire/optical fiber made with a resin and containing inorganic filler particles (para.

Art Unit: 1796

70). At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the optical wire/fiber of Ingman et al. with the composition of Kaneko and would have been motivated to do so because, as the composition is insulating, which is needed in optical fibers.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-5, 8-13, and 15-20 have been considered but are moot in view of the new ground(s) of rejection.

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Megan McCulley whose telephone number is (571)270-3292. The examiner can normally be reached on Monday - Thursday 7:30-6:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic



Art Unit: 1796

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James J. Seidleck/  
Supervisory Patent Examiner, Art Unit 1796

/M. M./  
Examiner, Art Unit 1796